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Original Article

## Sociodemographic and clinical factors associated with the decision time for seeking care in acute myocardial infarction<sup>1</sup>

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Objective: this study aimed to analyze the interaction of gender in the association between decision time for seeking healthcare services and the sociodemographic and clinical variables. Method: this exploratory, cross-sectional study was performed with 100 individuals interviewed in hospitals in Salvador, Bahia. The chi-square test or Fisher's exact test and the robust linear regression model were used in the analysis. A statistical significance of 5% was adopted. Results: men and women presented long decision times. The decision time was less for smokers and those with constant and/or severe pain. There was an interaction between gender and smoking and between gender and pain radiating to the neck or jaw for the decision time outcome. Conclusion: decision times were long and were influenced by clinical and gender variables. The study provides support for nursing care practices focused on the specificity of these factors and of the genders aiming to reduce the decision time.

Descriptors: Myocardial Infarction; Gender Identity; Nursing Care.

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## Introduction

Acute coronary syndromes are the leading worldwide cause of morbidity and mortality. Every year 7.1 million deaths occur due to coronary artery disease (CAD), with estimates of 11.1 million in 2020<sup>(1)</sup>. It is estimated that in Brazil, 300 to 400 thousand cases occur per year, and that death occurs in every 5 to 7 cases<sup>(2)</sup>. In the state of Bahia, in 2010, 4137 deaths from acute myocardial infarction (AMI) were recorded, with 773 in the capital<sup>(3)</sup>.

Half of all AMI deaths occur within the first hour after the onset of symptoms<sup>(4)</sup>, with survival depending on early treatment<sup>(1)</sup>. The time elapsed between the onset of symptoms and the coronary reperfusion is a determinant factor for the clinical course of the AMI<sup>(5)</sup>, as the effectiveness of coronary reperfusion therapies is time-dependent<sup>(5-6)</sup>. The delay in the implementation of these therapies remains an important obstacle to achieving their full benefit<sup>(7)</sup>. Thus, one challenge is to identify the factors that contribute to the prehospital delay (time between the onset of symptoms and arrival at an emergency department) in patients with AMI<sup>(7)</sup>. Studies indicate the time taken to make the decision to seek a healthcare service (DT), i.e., the period between the onset of symptoms and the decision to seek a healthcare service, as the main component of this delay<sup>(5-6)</sup>. However, the studies are inconclusive regarding the reasons for this delay, especially between the genders<sup>(8)</sup>. It is important to consider that male and female social constructions may be involved in people's attitudes regarding their own health, influencing the course and the mortality of the disease. Therefore, gender may be a factor that differentiates behavior when faced with AMI<sup>(9)</sup>.

A number of factors have been highlighted concerning why individuals delay seeking healthcare, including socioeconomic (age, marital status, education, income, gender, etc.) and clinical (type of symptoms, duration and intensity of pain etc) conditions<sup>(5-6)</sup>. However, Brazilian literature regarding the influence of these factors on the DT is scarce. Knowledge about these factors will guide health practices to optimize the early search for care.

Therefore, the general aim of the study was: To analyze the interaction of gender on the association between the decision time and the sociodemographic and clinical variables. The specific aims were defined as: 1. to estimate the decision time for men and women who suffered AMI; 2. to verify the influence of

sociodemographic and clinical variables on the decision time.

## Methods

This exploratory, cross-sectional study was conducted in two reference hospitals for the treatment of AMI, located in Salvador, Bahia.

To calculate the sample size ( $n$ ), 99/100,000 was taken as the parameter for the estimated prevalence of AMI in adults of Salvador-BA<sup>(10)</sup>, and the sample calculation:

$$n = \frac{NP(1-P)}{(N-1)D+P(1-P)}.$$

$$\text{Where, } D = \frac{B^2}{Z_{\alpha/2}} \text{ and } P\left(\left|\hat{P}-P\right| \leq B\right) = 1-\alpha.$$

$N$  – total population number assumed during the data collection period = 1, 000;  $P$  – proportion within the study population = 0.099;  $n$  – sample size;  $\alpha$  – significance level;  $(1-\alpha)100\%$  – degree of confidence;  $B$  – estimated maximum error desired;  $Z_{\alpha/2} = 1,96$ ;  $1-\alpha = 0,95$ ;  $B = 0.04$  or  $4\%$ <sup>(11)</sup>.

According to the calculation, the sample size should be 99, opting for 100 individuals, using the inclusion criteria: medical diagnosis of AMI with or without ST-segment elevation recorded in medical records; hospitalization for at least 24 hours or a maximum time of 30 days post-AMI, to avoid recall bias; orientation in time and space, no medical restrictions for the interview and consent to take part in the study.

The selection of the subjects for the sample was performed with the identification of the individuals with a medical diagnosis of AMI in the registration book and confirmed in the patient records. Those that met the inclusion criteria and did not have any examinations and/or possible procedures for an hour were selected. The individuals were approached in the bed and informed of the aims of the investigation, identifying those interested in participating in the study through the signing of the Terms of Free Prior Informed Consent. The project was approved by the Ethics Committee, protocol 11/09, and complied with the ethical principles of Resolution 196/96<sup>(12)</sup>.

The instrument developed for the data collection consisted of two parts with structured questions. Part I investigated sociodemographic data and Part II, data on cardiovascular risk factors (CVRF), clinical manifestations

and type of AMI, interpretation of the symptoms and DT. The instrument was administered through interviews, conducted between April and November 2009.

The data were compiled in a database using the SPSS, version 17.0, program for Windows, and were analyzed as percentages and means. To analyze the association between the sociodemographic and clinical variables according to gender, the chi-square test was used, or Fisher's exact test with the occurrence of expected values below 5, in 2x2 tables. In the bivariate and multivariate analyzes, using the robust linear regression model, the association between DT and the sociodemographic and clinical variables was verified, and the interaction term between the gender variable and the variables of interest was tested. For the analyzes, a logarithmic transformation was performed for the dependent variable DT to account for the asymmetry of the times. The significance level adopted was 5% for the tests ( $p \leq 0.05$ ).

## Results

### Sociodemographic characterization

The sample consisted of 100 individuals, with 29 women (W), aged between 41 and 87 years, and 71 men (M), aged between 27 and 80 years. The mean age for the W group was 58.97 years  $\pm$  SD 12.10 and for the M group 58.70 years  $\pm$  SD 11.08, with the age less than 60 years prevailing in the total sample and in both genders. Regarding the self-declared race/color, black was the most frequent in the total sample (71.0%) and in both genders ( $p=0.440$ ). Considering the marital status, the majority were married or in a stable union (75.0%), followed by separated (9.0%), single (9.0%), and widowed (7.0%). It is noteworthy that, for both the W and M groups, the prevalent condition was being married or living with a partner ( $p=0.099$ ). Low education was predominant, with 69.0% of the sample having completed elementary education. This was also prevalent for the M and W groups ( $p=0.908$ ). Regarding the labor situation 67.0% were economically active, i.e. employed, self-employed or retired with activity, and 33.0% inactive due to being unemployed or retired with no activity. The gender and employment status variables were not associated. The predominant family income was up to three minimum wages for the total sample (63.0%) and for the genders ( $p=0.739$ ). The prevalent number of dependents was up to three (58%), which was also observed for both genders, without a significant association ( $p=0.209$ ). The majority of the sample lived in the company of a partner (69.0%), with children

(63.0%) and grandchildren (23%), with a mean of two people per household. It was noted that those of the M group more often lived with a partner compared to the W group ( $p=0.017$ ), and that those of the W group more often lived accompanied by granddaughters ( $p=0.081$ ). The majority of the participants were originally from the city of Salvador (70.0%).

### Clinical characterization and the judgment of the pain as a symptom of AMI

A family history of arterial hypertension (66%) and CAD (50%) were the most reported CVRFs. Regarding previous cardiovascular events, 52% reported angina pectoris and 16% AMI. Acute myocardial infarction with ST-segment elevation prevailed, most frequent in the M group=51 (71.8%) ( $p=0.025$ ); (Table 1).

The majority of the sample either did not know the nature of the symptoms (15%) or had not interpreted them as being of cardiovascular origin (41%), in this case, the problem was assigned to the stomach (24.0%), the spine (9.0 %), brain hemorrhage or arterial hypertension (4.0%), stress/everyday problems (3.0%), and effect of medication (1.0%). Of the 44 participants who considered the symptoms to be of cardiovascular origin, 22.0% judged that they were suffering an AMI. A greater proportion of the M group considered themselves victims of AMI or angina pectoris, although there was no significant association between gender and judgment of the nature of the symptoms. The symptoms were judged as severe by the majority of the sample (64.0%), as well as by the M and W groups. The severity was justified due to severe pain and worsening of the symptoms or the association of the clinical condition with a cardiac problem.

In Table 2, it can be verified that the prevalent symptoms were chest pain (81%), sweating (67%), dyspnea (47%), and pain radiating to the arms (43.0%). For the W group the most frequent symptoms were dyspnea, pain radiating to the back and epigastrium, vomiting, syncope, and pain radiating to the jaw. Regarding the M group, sweating, pain radiating to the arms and neck, nausea, dizziness, and palpitations predominated. The only associations verified were between gender and sweating, with a threshold significance ( $p=0.054$ ), more prevalent in the M group, and between gender and jaw pain, with a significantly higher frequency for the W group ( $p=0.021$ ).

Constant pain was more frequently reported than inconstant pain, for the total sample and the genders. One participant was unable to report this characteristic, having passed out at the onset of the symptoms. The

type of pain most often mentioned was a squeezing pain (45.0%), followed by burning (36.0%), also predominant for the genders. A higher proportion of the W group reported stabbing, heavy and tearing types of pain, and the M group, burning and squeezing types of pain. There was an association between a heavy type

of pain and gender, with a higher frequency for the W group. Severe pain at the onset of symptoms was reported by 63.0% of the sample, also predominating for both groups. At the moment of the decision to seek care, 20 participants moved from the mild or moderate pain categories to severe.

Table 1 - Judgment of pain as a symptom of myocardial infarction and clinical characterization according to the sample and the genders. Salvador, BA, Brazil, 2010

Variables	Sample (N=100)		Men (n=71)		Women (n=29)		p value*
	n	%	n	%	n	%	
Report of cardiovascular risk factors							
Arterial hypertension	66	66.0	43	60.6	23	79.3	0.186
Family history of coronary artery disease	50	50.0	34	47.9	16	55.2	0.696
Dyslipidemia	31	31.0	19	26.8	12	41.4	0.239
Diabetes mellitus	23	23.0	13	18.3	10	34.5	0.153
Smoker	19	19.0	15	21.1	4	13.8	0.290
Coronary artery disease							
Previous angina	52	52.0	35	49.3	17	58.6	0.397
Previous acute myocardial infarction	16	16.0	10	14.1	6	20.7	0.595
Type of acute myocardial infarction							
With ST elevation	65	65.0	51	71.8	14	48.3	0.025
Without ST elevation	35	35.0	20	28.2	15	51.7	
Judgment of the symptoms							
Regarding the nature							
Associated with cardiac problem	44	44.0	33	46.5	11	37.9	0.440
Did not associate with cardiac problem	41	41.0	26	36.6	15	51.7	0.760
Did not know what it was	15	15.0	12	16.9	3	10.3	0.309
Regarding the severity							
Severe	64	64.0	45	63.4	19	65.5	0.840
Not severe	36	36.0	26	36.6	10	34.5	

\*The P values were obtained using the chi-square test or Fisher's exact test

Table 2 - Characteristics of the symptoms of acute myocardial infarction according to the sample and the genders. Salvador, BA, Brazil, 2010

Variables	Sample (N=100)		Men (n=71)		Women (n=29)		P value*
	N	%	N	%	n	%	
Acute myocardial infarction symptoms†							
Chest pain	81	81.0	57	80.3	24	82.8	0.774
Sweating	67	67.0	52	73.2	15	51.7	0.054
Dyspnea	47	47.0	32	45.1	15	51.7	0.545
Pain radiating to the arms	43	43.0	31	43.7	12	41.4	0.834
Pain radiating to the back	35	35.0	23	32.4	12	41.4	0.393
Nausea	32	32.0	23	32.4	9	31.0	0.895
Vomiting	31	31.0	20	28.2	11	37.9	0.338
Dizziness	20	20.0	17	23.9	3	10.3	0.123
Pain radiating to the neck	17	17.0	13	18.3	4	13.8	0.711
Radiating epigastric pain	18	18.0	11	15.5	7	24.1	0.307
Palpitation	14	14.0	10	14.1	4	13.8	1.000
Syncope	10	10.0	7	9.9	3	10.3	1.000
Headache	6	6.0	3	4.2	3	10.3	0.352
Tremors	2	2.0	2	2.8	-	-	1.000
Pain radiating to the jaw	7	7.0	2	2.8	5	17.2	0.021

(continue...)

Table 2 - (continuation)

Variables	Sample (N=100)		Men (n=71)		Women (n=29)		P value*
	N	%	N	%	n	%	
Characteristics of the pain							
Constancy (n=99)							
Constant	66	66.0	49	69.0	17	58.6	0.319
Inconstant	23	23.0	15	21.1	8	27.6	0.326
Type of pain							
Squeezing	45	45.0	33	46.5	12	41.4	0.642
Burning	36	36.0	29	40.8	7	24.1	0.114
Cutting	14	14.0	9	12.7	5	17.2	0.540
Stabbing	13	13.0	7	9.9	6	20.7	0.144
Heavy	6	6.0	2	2.8	4	13.8	0.057
Pain intensity at onset of symptoms							
Mild	4	4.0	3	4.2	1	3.4	0.578
Moderate	33	33.0	26	36.6	7	24.1	
Severe	63	63.0	42	59.2	21	72.4	
Pain intensity at the decision for care							
Moderate	17	17.0	10	14.1	7	24.1	0.359
Severe	83	83.0	61	85.9	22	75.9	

\*The p values were obtained using the chi-square test or Fisher's exact test.

†Each individual reported more than one symptom

### Comparison of the DT according to sociodemographic factors, clinical factors and gender

The geometric mean (GM) and median of the DT were, respectively, 1.1h and 1.0h. For the W group, the GM of the DT was 1.4h and the median 1.5h, and for the M group, the GM was 0.9h and the median 1.0h. The W group presented longer mean decision times than the M group, however, the difference was not statistically significant.

There was no significant association between DT and the sociodemographic variables, and there was no interaction between gender and these variables for the DT outcome.

Among the CVRFs there was a significant association between DT and smoking, in which smokers

presented shorter DTs ( $p=0.052$ ). There was also an interaction between gender and smoking for the DT outcome ( $p=0.017$ ), where the smokers of the W group presented longer DT (2.4h) than the smokers of the M group (0.3h) (Table 3).

There was no significant association between DT and the interpretation of the symptoms as cardiovascular problems, however, the people who had judged the problems to be cardiovascular presented shorter DTs. Those who considered the symptoms severe also presented shorter DTs ( $p=0.007$ ). There was no interaction between gender and assigning severity to the symptoms or interpretation of the nature of the symptoms as cardiac for the DT outcome (Table 3).

Table 3 - Cardiovascular risk factors, interpretation of the nature of the symptoms and of their severity associated with the decision time and the gender. Salvador, BA, Brazil, 2010

Variables	Geometric Mean, in hours, of the decision time				
	Sample (N=100)	P value*	Men (n=71)	Women (n=29)	P value†
Report of cardiovascular risk factors					
Arterial hypertension					
Yes (66)	1.1	0.990	1.0	1.2	0.278
No (34)	1.1		0.9	2.9	
Smoker					
Yes (18)	0.5	0.052	0.3	2.4	0.017
No (82)	1.3		1.3	1.3	
Diabetes mellitus					
Yes (23)	1.0	0.405	1.1	0.9	0.510
No (77)	1.1		0.9	1.8	

(continue...)

Table 3 - (continuation)

Variables	Geometric Mean, in hours, of the decision time				
	Sample (N=100)	P value*	Men (n=71)	Women (n=29)	P value†
Judgment of the symptoms					
Associated with cardiac problem (44)	0,8	0.289	0.7	1.2	0.764
Not associated with cardiac problem (56)	1,3		1.2	1.5	
Severity of the symptoms					
Severe (64)	0,8	0.007	0.6	1.1	0.470
Not severe (36)	2,0		1.9	2.1	

\*Shows the difference between the categories of the specific variables

†Shows the heterogeneity between men and women (the interaction). All p values were obtained using the robust linear regression model

Regarding the type of symptoms, there was a significant association between pain radiating to the neck or pain radiating to the jaw and DT ( $p=0.015$  and  $p=0.018$ , respectively), where the subjects who experienced these types of pain took longer to decide to seek a healthcare service than those who did not feel them. A statistically significant interaction was also verified between gender and pain radiating to the

neck, as well as gender and pain radiating to the jaw, and the DT outcome. Among the pain characteristics, regardless of gender, it was found that constant pain was a significant factor in the reduction of the DT compared to intermittent pain, while mild pain at onset of symptoms was a significant factor in the increase of the DT compared to moderate intensity pain (Table 4).

Table 4 - Clinical manifestations of acute myocardial infarction associated with the decision time and gender. Salvador, BA, Brazil, 2010

Variables	Geometric Mean of the decision time, in hours				
	Sample (N=100)	P value*	Men (n=71)	Women (n=29)	P value†
Type of symptoms					
Chest pain					
Yes (81)	1.0	0.848	0.9	1.5	0.339
No (19)	1.2		1.3	0.9	
Sweating					
Yes (66)	0.9	0.286	0.8	1.5	0.366
No (34)	1.4		1.5	1.3	
Dyspnea					
Yes (47)	1.0	0.580	1.0	0.9	0.179
No (53)	1.2		0.9	2.4	
Nausea					
Yes (32)	1.0	0.715	0.9	1.1	0.774
No (68)	1.1		1.0	1.6	
Dizziness					
Yes (20)	1.0	0.929	1.1	0.8	0.600
No (80)	1.1		0.9	1.5	
Pain radiating to neck					
Yes (17)	2.4	0.015	3.3	0.9	0.011
No (83)	0.9		0.7	1.5	
Epigastric pain					
Yes (18)	0.9	0.538	0.9	0.8	0.407
No (82)	1.1		0.9	1.7	
Palpitations					
Yes (14)	1.0	0.964	1.5	0.4	0.154
No (86)	1.1		0.9	1.7	
Pain radiating to jaw					
Yes (7)	4.2	0.018	26.6	2.0	<0.001
No (93)	1.0		0.9	1.3	

(continue...)

Table 4 - (continuation)

Variables	Geometric Mean of the decision time, in hours				
	Sample (N=100)	P value*	Men (n=71)	Women (n=29)	P value†
Characteristics of the pain					
Constancy					
Constant (66)	0.7	0.000	0.6	1.1	0.244
Inconstant (34)	2.7		3.0	2.2	
Type of pain					
Squeezing					
Yes (45)	1.4	0.215	1.1	2.4	0.471
No (55)	0.9		0.8	1.0	
Burning					
Yes (36)	0.7	0.141	0.7	0.9	0.945
No (64)	1.3		1.2	1.6	
Tearing					
Yes (14)	1.7	0.348	2.3	0.9	0.127
No (86)	1.0		0.8	1.6	
Stabbing					
Yes (13)	2.1	0.145	1.7	2.7	0.897
No (87)	1.0		0.9	1.2	
Heavy					
Yes (6)	0.7	0.499	0.4	1.0	0.653
No (94)	1.1		1.0	1.5	
Pain intensity at onset of symptoms					
Mild (4)	6.6	0.000	4.5	20.0	0.351
Moderate (35)	2.1		1.7	3.9	
Severe (61)	0.6		0.6	0.8	

\*Shows the difference between the categories of the specific variables

†Shows the heterogeneity between men and women (the interaction). All the p values were obtained using the robust linear regression model

## Discussion

In this study, men with AMI were predominant, corresponding to findings in the literature<sup>(5)</sup>. The women developed AMI earlier, considering the age limits of 55 years for men and 65 years for women, taken as the cutoff points for premature myocardial infarction in relation to gender<sup>(13)</sup>. The sample presented homogeneous sociodemographic characteristics, as it was composed of Brazilian Nation Health Service (SUS) users, primarily originating from the city of Salvador and its metropolitan area, who declared themselves mostly of black race/color and lived in conditions of social inequality evidenced by low education and family income. These findings confirm the descriptions in the literature of these characteristics as potentiators for the risk of cardiovascular disease<sup>(14-15)</sup>.

Both the M group and W group were slow to decide to seek care, however, the women presented a higher DT (1.4h vs. 0.9h), which exposed them to an increased risk of mortality, considering that approximately 50% of people with AMI die within the first hour of the development of a cardiovascular event<sup>(2)</sup>. It must be

considered that after the making the decision they still spent time getting to a health service prior to the diagnosis and treatment.

A higher proportion of the M group presented AMI with ST-segment elevation compared with the W group. Given the benefits of chemical or mechanical reperfusion, in this type of AMI, actions that encourage the reduction of DT are indispensable in order to optimize the benefits of these therapies, which vary in an inverse ratio to the time of their application<sup>(16)</sup>.

Although it is believed that the recognition of cardiovascular symptoms demands critical skills that may be affected in the group with less education, and that low income may hinder access to health services, in this study variations in income and education were not associated with higher DTs or with gender. Authors have also found independence between these variables<sup>(5-6,16)</sup>. Because the sample was composed of SUS users, income may not have been an obstacle to seeking care, considering that it is free.

Despite the prevalence of typical clinical manifestations of AMI, both for the total sample as well as for the gender groups, the vast majority (84%)



reported that it was the first episode of AMI and were, therefore, unfamiliar with the symptoms, perhaps hindering the adoption of appropriate actions in relation to the cardiovascular event. This fact, associated with low socioeconomic status, may explain why only 44% of them associated the pain with a cardiac problem or did not know what it meant. Although not statistically significant, it should be noted that the interpretation of the symptoms as a cardiac problem was responsible for shorter DT, as already stated by other authors<sup>(17)</sup>. Although there was no interaction with gender, it was observed that those of the M group that judged the symptoms as a cardiac problem had lower DTs. The judgment of the symptoms as a cardiac problem was more common for the group of men, possibly because of beliefs that AMI is a disorder pertaining to this gender or the fact that women do not judge themselves to be susceptible to cardiovascular events<sup>(13)</sup>.

Considering that 64% attributed severity to the symptoms and 56% did not associated them with AMI or did not know about their origin, it is possible to assume that the recognition of the potential severity of the clinical condition occurred in the course of the cardiovascular event, i.e., when the participants began to realize the symptoms could not be improved using personal resources or could no longer tolerate the pain. The interpretation of the severity of the AMI was determinant for shorter DT, revealing the importance of the conscientization of the community in general regarding seeking care early faced with the AMI, even in the absence of symptoms judged intolerable.

Regarding the DT and its relationship with the sociodemographic factors, the literature indicates that women and people over 70 years of age present a combination of less typical symptoms of AMI<sup>(17-19)</sup> and therefore may delay the decision to seek care. However, in this study, there was no significant association between DT, age and gender, with it being noted that the majority of the women and men suffered the infarction prior to 60 years of age and with typical symptoms of AMI.

In this study, the CVRFs identified agree with those described in the literature<sup>(13,20-21)</sup> as causal factors for CAD and prevalent in groups in situations of social inequality. The lack of association between the CVRFs reported and gender was also observed by other authors<sup>(13)</sup>. There was no significant association between DT and diabetes mellitus type II, although the literature suggests that diabetics delay seeking care<sup>(22)</sup>. The justifications for the prehospital delay in diabetics are not very clear,

but were associated with altered perception of the pain due to neuropathy, or the presentation of symptoms nonspecific for AMI<sup>(22)</sup>.

The smokers presented lower DT (0.5h vs. 1.3h;  $p=0.052$ ), indicating that smokers may perceive a greater risk of becoming ill. This perception seems to be predominantly related to the male gender, responsible for the significant DT reduction in this group. Therefore, women smokers especially need to receive special attention from the programs aimed at reducing prehospital delay faced with AMI.

The symptoms of AMI described by the participants were characteristic and corresponded to those found in the literature<sup>(20-21)</sup>. Regarding the particular type of pain, increased DT was significantly influenced by pain radiating to the neck and jaw, with males primarily responsible. Concerning the intensity of the pain, longer DTs were also found when it was classified as mild, in both genders. Conversely, severe and/or constant pain was associated with a significant decrease in the DT, with no difference between the genders, suggesting that severe pain can lead people to seek care faster due to their intolerance, while atypical symptoms can make them underestimate the seriousness<sup>(9,23)</sup>. It is likely that the radiation of pain out of the precordial region and/or its weak intensity would put into question its interpretation as a cardiac problem, allowing it to be associated with musculoskeletal problems, particularly in men.

This study highlights the importance of the need for basic information about the CVRFs, typical and atypical symptoms of AMI, and the risk of the delay in seeking care. The results clarified particularities of each gender that caused longer or shorter DTs faced with the AMI, contributing to the identification of risk groups. The identification of the clinical and sociodemographic factors implicated in the delay in seeking a healthcare service, guide health professionals in educational activities with the patients, family members and the community aimed at reducing the DT<sup>(16)</sup>.

## Conclusions

The study made contributions regarding the sociodemographic and clinical factors that affect the DT faced with the symptoms of AMI and their relationships with the genders. Long DTs were observed for the genders, with the women displaying longer times, however, this difference was not statistically significant. Clinical factors were associated with the DT, with shorter DTs highlighted for smokers, and those with constant



and sever pain. The study also allowed the conclusion that there was an interaction between gender and smoking, as well as between gender and pain radiating to the neck or jaw, for the DT outcome.

These findings guide healthcare actions aimed at seeking care early. Considering the health education component of nursing care practices, it is the nurse who should propose and evaluate effective interventions, based on specificities of the genders, which stimulate and valorize early treatment faced with AMI. The delay in the decision to seek care indicates the need for guidance and training to help individuals to recognize the symptoms of AMI and to valorize the immediate pursuit of an emergency service. The sample size can be highlighted as a possible limitation of the study. It is possible to suggest the hypothesis that with larger samples other significant associations could have been found.

It should also be considered that the present study focused on the interaction between the clinical and sociodemographic variables and gender regarding the DT outcome, therefore, other variables, such as the cultural and environmental factors, need to be evaluated in further studies.

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